

REMARKS

Claims 7, 8, 21-24, 27-29, and 33-46 remain pending in this application.

Claims 45 and 46 have been rejected under 35 U.S.C. § 102(e) as anticipated by Fukushima et al (U.S. Patent No. 6,346,929), while Claims 7, 8, 13, 15, 21-24, 27-29, 32 and 34 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Fukushima et al in view of Saitou et al (U.S. Patent No. 5,604,818). In addition, Claims 33 and 35-44 have been rejected under 35 U.S.C. § 112, first paragraph for alleging failing to comply with the written description requirement. These grounds of rejection are discussed below with respect to those claims which remain of record herein.

Claim 7: Applicant respectfully submits that the interpretation of Fukushima et al in the Office Action as regards the features of Claim 7 is internally inconsistent. That is, the Office Action equates displaying portions 2_L, 2_R, of Fig. 2 of Fukushima et al with the claimed output unit for providing information. On the other hand, the Office Action states that the information system of Fukushima et al does not project electromagnetic radiation onto the eye in the course of providing information. In Applicant's understanding of the primary reference, all of the embodiments taught in Fukushima et al rely on displaying portions 2_L, 2_R. Applicant believes this fact to be, in fact, underlined by Column 4, lines 45-66 cited by the Examiner.

That the secondary reference, Saitou et al, likewise relies on a projection of electromagnetic radiation into the user's eye in the course of providing information is demonstrated, *e.g.*, by box 540 in Fig. 4 as well as Column 6, lines 45-49 of Saitou et al.

In this respect, it must be noted that the claimed feature "in the course of providing information" does not just cover individual steps along the course of providing information, but instead covers the full course of providing information, *i.e.*, all steps subsequent to the determination of the information, yet up to and including its reception at the intended recipient.

In addition to the aforementioned distinction, Applicant notes that neither Fukushima et al nor Saitou et al teaches a scanning detecting unit as claimed. As discussed in the first paragraph on page 11 of Applicant's previous Response, Applicant respectfully submits that the CCD device of Fukushima et al is incapable of capturing a retinal reflex image of a natural scene ambient to the eye. Saitou et al does not address this deficiency of Fukushima et al.

Claim 8: It is not apparent from cited Column 11, lines 1-37 that Fukushima et al effects a scanning operation that captures an at least partial capture of a (retinal) reflex image and another scanning operation that carries out a less comprehensive capture thereof. Specifically, Applicant submits that Fukushima et al neither teaches nor suggests that the operations for capturing

the (in Fukushima et al: corneal) reflex image differ as regards *e.g.*, the number of pixels captured, the frequency of light captured, or the like.

Claim 21: The screen taught in Column 11, lines 40-45 of Fukushima et al must project light onto the user's retina. Otherwise, the desired feedback ("*...a virtual indication of the gazing point is given ...*") would not be possible. Moreover, LED 161 of Fig. 12 of Fukushima et al used to obtain a corneal reflection for eye tracking will inherently also project light onto the retina as is, in fact, shown in Fig. 12.

Saitou et al has been cited on account of its reliance on an (actively produced) retinal reflex. Accordingly, neither Fukushima et al nor Saitou et al teaches an information system that is passive: that is, does not project electromagnetic radiation onto the [user's] retina as in the claimed embodiment.

Claim 22: While it may be arguable that the CCD of Fukushima et al inadvertently captures some light from a natural ambient scene that has been reflected from the retina, Applicant does not recognize the slightest hint in Fukushima et al does not teach or suggest that the information system is configured and adapted to extract information pertaining to that natural scene from the reflex image. Instead, Fukushima et al uses cameras 3_L, 3_R to detect manual user input from the ambient scene. However, cameras 3_L, 3_R do not capture a reflex image from the eye. To the respect that Fukushima et al

captures an ocular reflex image, this is for the purpose of determining a gazing point, *i.e.*, the visual axis of the user, which is not information pertaining to the natural scene, but rather information pertaining to the orientation of the user's eye.

Claim 24: As discussed *supra* with regard to Claim 22, Fukushima et al fails to disclose that the information system is configured and adapted to extract information pertaining to the natural ambient scene from a captured (retinal) reflex image. Instead, it uses cameras 3_L, 3_R to detect manual user input from the ambient scene. However, cameras 3_L, 3_R do not capture a retinal reflex image. To the respect that Fukushima et al might capture an ocular reflex image, it is for the purpose of determining a gazing point, *i.e.*, the visual axis of the user, which is not information pertaining to the natural scene, but rather information pertaining to the orientation of the user's eye.

Claim 27 is patentable by virtue of its dependency from Claim 24.

Claim 28: Column 5, lines 5-34 of Saitou et al does not teach the extraction of information representative of physical retinal structures. Instead, it teaches extraction of the barycenter of the pupil based on the relative reflectivity of the retina, in general, versus the reflectivity of the cornea and, implicitly, the reflectivity of the iris. Saitou et al teaches that the corneal reflex image will appear brightest (Column 5, lines 11-12) and that the retinal reflex

image will appear bright [versus the adjacent reflex image off the iris] (Column 5, lines 26-33; upper three boxes in Figure 6).

Claim 29 is patentable by virtue of its dependency from Claim 28.

Claim 33: With regard to the rejection under §112, first paragraph, as described *e.g.* on page 19, lines 21-23 of the specification, the present invention can be configured and adapted to capture infrared light emanating from the blood vessels of the choroid coat of the eye, as opposed to infrared light from the ambient scene that has fallen onto and been reflected by the eye.

Claim 34 is patentable by virtue of its dependency from Claim 24. Moreover, as discussed *supra* with regard to Claim 28, no teaching in Saitou et al re extraction of information representative of physical retinal structures.

Claim 35 *et seq.*: With regard to the rejection under §112, as described *e.g.*, on pages 19, lines 13-18 of the specification, the present invention can be configured and adapted to determine physical structures of the retina, *e.g.*, the *fovea centralis*, the blind spot and/or the network of blood vessels in the choroid coat of the eye, from a captured retinal reflex image.

Claim 45 has been amended to specify that the captured natural scene is not only ambient to the eye, but also establishes a frame of reference for the eye. Accordingly, Claim 45 claims a controlling of the projection unit such that visible

images are projected onto the eye in a manner perceived as being in registration with this natural ambient scene that establishes a frame of reference for the eye. Fukushima et al in fact teaches way from this claimed feature.

Even if Column 12, lines 50-65 of Fukushima et al is interpreted, *e.g.*, in conjunction with Column 3, line 35-67 and Column 7, lines 15-40 thereof, as teaching that a mark is positioned in a user's field of view in registration with the user's finger present in the ambient scene (as the Office Action appears to suggest), it must be recognized that the projected image is nonetheless not in registration with the ambient scene that constitutes a frame of reference for the eye. For if the user were to turn his or her head, the user's finger (and, consequently, the mark) would appear to move relative to the background scene due to parallax. Such uncontrolled motion of the projected information relative to the user's frame of reference is one problem that this embodiment of the invention seeks to avoid (*cf. e.g.*, page 17, lines 12-17, page 48, lines 21-29, page 55, lines 6-15 and page 64, line 17 to page 65, line 15 of the specification).

Claim 46 is patentable by virtue of its dependency from Claim 45.

In light of the foregoing remarks, this application should be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general,

a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #101795.56303US).

Respectfully submitted,



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